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EVALUATION OF CANADIAN COMMERCIAL COALS:

NOVA SCOTIA AND NEW BRUNSWICK - 1975

T.E. TIBBETTS AND W.J. MONTGOMERY

AUGUST 1976

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EVALUATION OF CANADIAN COMMERCIAL COALS:
NOVA SCOTIA AND NEW BRUNSWICK - 1975

by

T.E. Tibbetts* and W.J. Montgomery**

ABSTRACT

Physical and chemical analyses of coal samples are reported, representing coals produced by mines in Nova Scotia and New Brunswick.

The samples were taken by the Energy Research Laboratories during the years 1974 and 1975. They represent the production on a specified day of the coals as commercially prepared at mines and coal washing plants or the coals as delivered to thermal electric generating stations.

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3040

EVALUATION DES HOUILLES COMMERCIALES CANADIENNES:
NOUVELLE-ECOSSE ET NOUVEAU-BRUNSWICK - 1975

par

T.E. Tibbetts* et W.J. Montgomery**

RESUME

Les auteurs donnent les résultats des analyses chimiques et physiques de échantillons de houille provenant des tous les mines en exploitation en Nouvelle-Ecosse du Nouveau-Brunswick.

Les échantillons ont été prélevés en 1974 and 1975 par le de recherche sur les combustibles. Ils sont représentatifs de la production journalière de la houille préparée commercialement aux mines et lavoirs ou livrée aux centrales thermiques.

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COAL AREAS AND PRODUCERS

(with approximate production in 1975 in thousands of short tons)

NOVA SCOTIA - (Underground Mines)

Sydney and Inverness Areas

Cape Breton Development Corporation	1,820
Evans Coal Mines Limited	18

Pictou Area

Drummond Coal Company Limited	17
Thorburn Mining Limited (Reclamation Project)	34

Joggins Area

River Hebert Coal Company Limited	23
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NOVA SCOTIA - (Surface Mines)

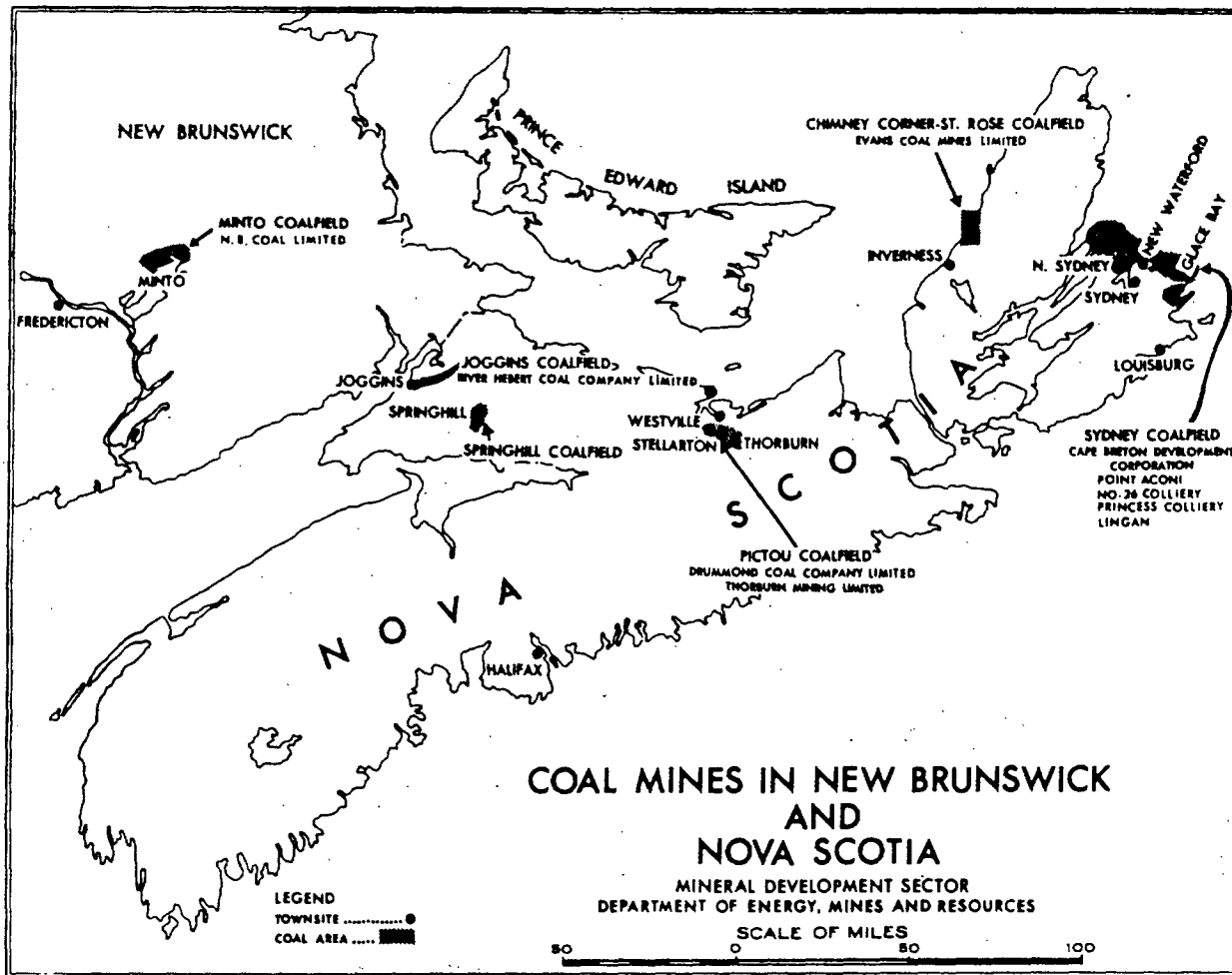
Sydney Area

Cape Breton Development Corporation	101
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NEW BRUNSWICK - (Surface Mines)

Minto Area

N.B. Coal Limited	461
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INTRODUCTION

In order to keep in close touch with changes in coal quality and to ensure that such changes are significant and not due to improper sampling techniques, the Energy Research Laboratories periodically collects samples of commercially prepared coals at the mines in eastern and western Canadian coal-fields. The project "Evaluation of Canadian Commercial Coals", is conducted under the direction of the Coal and Peat Resources Evaluation Section.

All samples collected under this project are obtained in accordance with recognized reliable specifications and for the most part are representative of the production for one day at the mines. Normal production and preparation procedures are followed at the mine during the sampling period, allowing the samples to be truly representative of the commercially prepared products. In certain instances, where it is recognized that more representative samples can be collected, sampling is conducted at thermal electric generating stations; where this is done it is so noted.

The gross samples were crushed and reduced in volume in the field prior to being shipped to Ottawa for analysis. Energy Research Laboratories has a field laboratory with complete sample preparation facilities located at the Point Edward Industrial Park, Sydney, Nova Scotia. In New Brunswick, the sample preparation facilities of the New Brunswick Power Commission were used for partial preparation of samples collected in the Minto coalfield.

In order to report more accurately the total "as received" moisture of coals sampled in Nova Scotia, the loss of moisture on air drying was determined by standardized procedure at the Point Edward Laboratory prior to sample preparation. In New Brunswick, where significant time lag was anticipated between the sampling period and sample preparation (crushing and volume reduction), and when practical in reference to particle size, special moisture samples were prepared from the gross sample at the time of sampling.

This publication contains the general analyses of all commercial coal samples collected under this project during the years 1974 and 1975 at mines, coal washeries and delivery points in Nova Scotia and New Brunswick. It also contains the ultimate analyses and ash analyses of most samples.

All analyses were conducted by the Energy Research Laboratories in accordance with ASTM standards or ERL modifications of those standards.

Except for the Inverness area coals, proximate, sulphur and calorific values are reported on the "as received" moisture basis. Other analyses are made on air dried sample. Analyses of coal samples collected in the Inverness coalfield are reported, because of the lower rank of this coal, on the equilibrium ("in situ") moisture basis.

Ash fusion determinations are made in a reducing atmosphere.

This is the first time that trace mercury determinations have been made under this project and the results are reported for most samples. The analytical procedure is not standardized (by ASTM). In brief, it is a bomb combustion method followed by a flameless atomic absorption technique.

The analyses are presented in two sections as follows:

- Section I - General Analyses
 - A. Nova Scotia
 - B. New Brunswick

- Section II - Ultimate and Ash Analyses
 - A. Nova Scotia
 - B. New Brunswick

GLOSSARY OF ABBREVIATED TERMS

sq	-	square-hole screen
rd	-	round-hole screen
sl	-	slot-hole screen
-	-	not determined
ASTM	-	American Society for Testing and Materials
ERL	-	Energy Research Laboratories
st	-	short ton (2000 pounds)

SECTION 1 - GENERAL ANALYSES

A. Nova Scotia

B. New Brunswick

A. NOVA SCOTIA

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Lingan, Cape Breton County, Nova Scotia
 Name of Mine or Coal Lingan Mine (See Note)

Date Sampled	15-04-75	18-06-75
Weight Sampled (approx.)tons	270	75

Size: Mine Designation	Screened Lump	Screened Lump
Screen Openingin.	Plus 2 sq	Plus 2 sq

ERL Laboratory No.	2907-75	3994-74
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Proximate Analysis		
Moisture	2.9	3.0
Ash	8.8	8.5
Volatile Matter	35.9	37.3
Fixed Carbon	52.4	51.2
Sulphur	2.0	2.8
Calorific ValueBtu/lb.	13,330	13,510
Ash Fusibility		
Initial Temp.°F	2140	1950
Softening Temp: (a) Spherical°F	2390	2180
(b) Hemispherical.....°F	2460	2330
Fluid Temp.°F	2500	2450
Grindability Index (Hardgrove)	51	-
Free Swelling Index (ASTM)	7	5
Classification by Rank (ASTM)	High-Volatile A Bituminous	
Trace Mercuryppm	0.29	0.33

Note: Underground, longwall advance and room and pillar mining. One 85 in. seam (Harbour); 15% to 18% dip. Overburden 1200 ft. Production in 1975, 1,107,271 st.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Lingan, Cape Breton County, Nova Scotia
 Name of Mine or Coal Lingan Mine (cont'd)

Date Sampled	15-04-75	8-05-75*	18-06-75
Weight Sampled (approx.)tons	1250	550	350
Size: Mine Designation	Slack	Slack	Slack
Screen Openingin.	Minus 2 sq	Minus 2 sq	Minus 2 sq
Laboratory No.	2908-75	2906-75	3995-74
Proximate Analysis			
Moisture%	3.9	5.3	4.0
Ash%	16.7	8.2	9.5
Volatile Matter%	32.4	33.6	35.6
Fixed Carbon%	47.0	52.9	50.9
Sulphur%	2.4	1.4	3.0
Calorific ValueBtu/lb.	11,790	12,970	12,920
Ash Fusibility			
Initial Temp.°F	2210	2170	1980
Softening Temp: (a) Spherical°F	2450	2400	2330
(b) Hemispherical.....°F	2530	2510	2440
Fluid Temp.°F	2550	2540	2480
Grindability Index (Hardgrove)	54	-	-
Free Swelling Index (ASTM)	7½	7½	6
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.29	0.35	0.26

* Sampled at the Nova Scotia Power Corporation, Seaboard Station.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No.26 Mine (See Note)

Date Sampled	09-04-75	22-05-75 *	20-06-74 *
Weight Sampled (approx.) tons	700	55	600
Size: Mine Designation	Screened Lump	Egg	Run of Mine
Screen Opening in.	Plus 2 sq	Plus $1\frac{3}{4}$ rd	Minus 4 sq
ERL Laboratory No.	2909-75	2896-75	3990-74
Proximate Analysis			
Moisture %	3.0	3.4	3.1
Ash %	9.6	3.0	7.6
Volatile Matter %	33.7	35.9	32.5
Fixed Carbon %	53.7	57.7	56.8
Sulphur %	2.1	0.7	1.0
Calorific Value Btu/lb.	13,440	14,560	13,730
Ash Fusibility			
Initial Temp.°F	2140	2100	2010
Softening Temp:(a) Spherical°F	2370	2260	2360
(b) Hemispherical.°F	2450	2430	2400
Fluid Temp.°F	2500	2590	2480
Grindability Index (Hardgrove)	59	-	-
Free Swelling Index (ASTM)	6 $\frac{1}{2}$	6	8
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercury ppm	0.50	0.10	0.15

* Sampled at the wash plant at Sydney Mines.

Note: Underground, longwall advance. One 85 in seam (Harbour); 14% to 25% dip. Overburden 2323 ft. Production in 1975, 461,147 st.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No.26 Mine (cont'd)

Date Sampled	22-05-75*	22-05-75*	20-06-74
Weight Sampled (approx.)tons	100	750	400
Size: Mine Designation	Nut	Coarse Slack	Slack
Screen Openingin.	$1\frac{3}{4}$ to $\frac{3}{4}$ rd	Minus $1\frac{3}{4}$ rd	Minus $\frac{3}{4}$ sq
FRC Laboratory No.	2897-75	2898-75	3992-74
Proximate Analysis			
Moisture%	3.8	7.0	4.0
Ash%	3.0	3.2	7.2
Volatile Matter%	34.5	32.8	32.9
Fixed Carbon%	58.7	57.0	55.9
Sulphur%	0.9	1.0	0.9
Calorific ValueBtu/lb.	14,480	13,920	13,750
Ash Fusibility			
Initial Temp.°F	2110	2120	2080
Softening Temp: (a) Spherical°F	2280	2320	2350
(b) Hemispherical.....°F	2450	2500	2450
Fluid Temp.°F	2600	2580	2460
Grindability Index (Hardgrove)	-	-	-
Free Swelling Index (ASTM)	$7\frac{1}{2}$	7	$8\frac{1}{2}$
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.14	0.12	0.11

* Sampled at the wash plant at Sydney Mines.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No. 26 Mine (cont'd)

Date Sampled	22-05-75*	09-04-75	20-06-74
Weight Sampled (approx.) tons	85	75	85
Size: Mine Designation	Pea	Pea	Pea
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ rd	$\frac{3}{4}$ rd to $\frac{1}{4}$ slot	$\frac{3}{4}$ rd to $\frac{1}{4}$ slot
ERL Laboratory No.	2899-75	2910-75	3991-74
Proximate Analysis			
Moisture %	6.2	3.2	2.9
Ash %	3.2	8.1	4.7
Volatile Matter %	33.4	33.4	33.9
Fixed Carbon %	57.2	55.3	58.5
Sulphur %	0.6	1.9	0.9
Calorific Value Btu/lb.	14,080	13,580	14,310
Ash Fusibility			
Initial Temp.°F	2140	2130	2150
Softening Temp:(a) Spherical°F	2370	2350	2340
(b) Hemispherical.°F	2530	2430	2420
Fluid Temp.°F	2570	2490	2460
Grindability Index (Hardgrove)	-	62	-
Free Swelling Index (ASTM)	7½	6½	7½
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.13	0.36	0.14

* Sampled at the wash plant at Sydney Mines.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No. 26 Mine (cont'd)

Date Sampled	22-05-75*	09-04-75	20-06-75
Weight Sampled (approx.) tons	675	450	265
Size: Mine Designation	Fines	Fines	Fines
Screen Opening in.	Minus $\frac{1}{4}$ rd	Minus $\frac{1}{4}$ slot	Minus $\frac{1}{4}$ slot
ERL Laboratory No.	2900-75	2911-75	3993-74
Proximate Analysis			
Moisture %	5.3	4.1	4.3
Ash %	7.8	10.8	7.5
Volatile Matter %	31.1	31.2	32.1
Fixed Carbon %	55.8	53.9	56.1
Sulphur %	1.2	1.9	1.1
Calorific Value Btu/lb.	13,310	13,040	13,580
Ash Fusibility			
Initial Temp.°F	2150	2130	2130
Softening Temp:(a) Spherical°F	2440	2350	2340
(b) Hemispherical.°F	2480	2450	2450
Fluid Temp.°F	2530	2480	2510
Grindability Index (Hardgrove)	-	66	-
Free Swelling Index (ASTM)	7	7	8½
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.19	0.36	0.12

* Sampled at the wash plant at Sydney Mines.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Sydney Mines, Cape Breton County, Nova Scotia
 Name of Mine or Coal Princess Mine (Wash Plant) (See Note)

Date Sampled	13-06-74	13-06-74	13-06-74
Weight Sampled (approx.) tons	80	160	105
Size: Mine Designation	Egg	Nut	Pea
Screen Opening in.	Plus $1\frac{3}{4}$ rd	$1\frac{3}{4}$ to $\frac{3}{4}$ rd	$\frac{3}{4}$ to $\frac{1}{4}$ rd
ERL Laboratory No.	3996-74	3997-74	3999-74
Proximate Analysis			
Moisture %	3.0	3.3	4.8
Ash %	6.7	4.6	4.7
Volatile Matter %	37.5	37.7	36.4
Fixed Carbon %	52.8	54.4	54.1
Sulphur %	3.9	3.0	3.0
Calorific Value Btu/lb.	13,970	14,170	13,960
Ash Fusibility			
Initial Temp. °F	2040	2070	2050
Softening Temp:(a) Spherical °F	2130	2110	2150
(b) Hemispherical. °F	2170	2170	2180
Fluid Temp. °F	2490	2470	2410
Grindability Index (Hardgrove)	-	-	-
Free Swelling Index (ASTM)	5	5½	5½
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercury ppm	0.33	0.28	0.25

Note: Underground, longwall advance. One 60 in. seam (Harbour); 12% dip. Overburden, 2440 ft. Preparation plant with McNalley Pittsburg Baum Jig; capacity 350 tph. Production in 1975, 70,451 st. Mine closed in December, 1975.

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Sydney Mines, Cape Breton County, Nova Scotia
 Name of Mine or Coal Princess Mine (Wash Plant) (cont'd)

Date Sampled	13-06-74	13-06-74	13-06-74
Weight Sampled (approx.) tons	400	165	275
Size: Mine Designation	Coarse Slack	Slack	Fines
Screen Opening in.	Minus $1\frac{3}{4}$ rd	Minus $\frac{3}{4}$ rd	Minus $\frac{1}{4}$ rd
ERL Laboratory No.	3998-74	4000-74	4001-74
Proximate Analysis			
Moisture%	5.2	5.1	3.1
Ash%	5.0	12.6	19.0
Volatile Matter%	36.6	33.3	32.2
Fixed Carbon%	53.2	49.0	45.7
Sulphur%	2.6	2.9	2.8
Calorific ValueBtu/lb.	13,860	12,550	11,840
Ash Fusibility			
Initial Temp. °F	2010	2000	2040
Softening Temp: (a) Spherical °F	2060	2310	2480
(b) Hemispherical..... °F	2170	2360	2640
Fluid Temp. °F	2350	2450	2700
Grindability Index (Hardgrove)	-	-	-
Free Swelling Index (ASTM)	6	5½	-
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.25	0.28	0.28

Mine Operator	DRUMMOND COAL COMPANY LIMITED
Mine Location	Westville, Pictou County, Nova Scotia
Name of Mine or Coal	Drummond (See Note)

Date Sampled	20-11-75	20-11-75	20-11-75
Weight Sampled (approx.) tons	25	15	20

Size: Mine Designation	Screened Lump	Nut	Slack
Screen Opening in.	Plus $1\frac{1}{2}$ sq	$1\frac{1}{2}$ to $\frac{3}{4}$ sq	Minus $\frac{3}{4}$ sq

ERL Laboratory No.	2095-76	2096-76	2097-76
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Proximate Analysis

Moisture %	2.9	2.6	4.2
Ash %	20.6	22.5	23.8
Volatile Matter %	25.6	26.4	26.4
Fixed Carbon %	51.9	48.5	45.6
Sulphur %	1.7	2.3	2.5
Calorific Value Btu/lb.	11,070	10,950	10,260

Ash Fusibility

Initial Temp.°F	2520	2230	2220
Softening Temp:(a) Spherical°F	2670	2490	2370
(b) Hemispherical.°F	2700+	2560	2440
Fluid Temp.°F	2700+	2620	2530

Grindability Index (Hardgrove)	52	55	63
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Free Swelling Index (ASTM)	1	1	1
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Classification by Rank (ASTM)	High-Volatile A Bituminous		
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Trace Mercuryppm	0.10	0.07	0.38
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Note: Underground, room and pillar mining. One 8 ft seam; 18° dip. Overburden, 200 ft. Production in 1975, 16,696 st.

Mine Operator EVANS COAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans (cont'd)

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.) tons	30	50	30
Size: Mine Designation	Egg	Egg	Egg
Screen Opening in.	$3\frac{1}{4}$ to 2 sq	$3\frac{1}{4}$ to 2 sq	$3\frac{1}{4}$ to 2 sq
ERL Laboratory No.	2087-76	2902-75	4003-74
Proximate Analysis			
Moisture (Equilibrium) %	5.6	5.6	5.6
Ash %	10.3	9.8	10.2
Volatile Matter %	35.8	37.1	35.3
Fixed Carbon %	48.3	47.5	48.9
Sulphur %	6.2	5.4	6.1
Calorific Value Btu/lb.	11,590	11,760	11,680
Ash Fusibility			
Initial Temp. °F	1960	1990	1810
Softening Temp: (a) Spherical °F	2060	2050	1940
(b) Hemispherical. °F	2170	2070	2010
Fluid Temp. °F	2260	2340	2070
Grindability Index (Hardgrove)	52	55	-
Free Swelling Index (ASTM)	1	1	$1\frac{1}{2}$
Classification by Rank (ASTM)	High-Volatile B Bituminous		
Trace Mercury ppm	0.10	0.15	0.12

Mine Operator EVANS COAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans (cont'd)

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.) tons	30	10	35
Size: Mine Designation	Nut	Nut	Nut
Screen Opening in.	2 to $\frac{3}{4}$ sq	2 to $\frac{3}{4}$ sq	2 to $\frac{3}{4}$ sq
ERL Laboratory No.	2088-76	2903-75	4004-74
Proximate Analysis			
Moisture (Equilibrium) %	5.4	5.4	5.4
Ash %	14.0	12.0	10.5
Volatile Matter %	34.6	36.5	35.3
Fixed Carbon %	46.0	46.1	48.8
Sulphur %	6.5	6.6	6.2
Calorific Value Btu/lb.	11,180	11,400	11,780
Ash Fusibility			
Initial Temp. °F	2030	2030	1930
Softening Temp: (a) Spherical °F	2120	2090	2000
(b) Hemispherical. °F	2210	2190	2150
Fluid Temp. °F	2350	2370	2360
Grindability Index (Hardgrove)	51	51	-
Free Swelling Index (ASTM)	1	1	1 $\frac{1}{2}$
Classification by Rank (ASTM)	High-Volatile B Bituminous		
Trace Mercury ppm	0.09	0.13	0.12

Mine Operator EVANS COAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans (cont'd)

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.) tons	20	10	20

Size: Mine Designation	Stoker Pea	Stoker Pea	Stoker Pea
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ sq	$\frac{3}{4}$ to $\frac{1}{4}$ sq	$\frac{3}{4}$ sq to $\frac{1}{4}$ slot

ERL Laboratory No.	2090-76	2904-75	4005-74
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Proximate Analysis

Moisture (Equilibrium)..... %	5.7	5.7	5.7
Ash	11.7	12.8	10.8
Volatile Matter	35.0	35.0	35.3
Fixed Carbon	47.6	46.5	48.2
Sulphur	6.2	7.3	5.6
Calorific Value	11,400	11,200	11,690

Ash Fusibility

Initial Temp.°F	1960	2020	1920
Softening Temp:(a) Spherical°F	2060	2070	1980
(b) Hemispherical.°F	2210	2240	2140
Fluid Temp.°F	2270	2400	2290

Grindability Index (Hardgrove)	51	51	-
Free Swelling Index (ASTM)	$1\frac{1}{2}$	1	2
Classification by Rank (ASTM)	High-Volatile B Bituminous		
Trace Mercury	0.12	0.14	0.11

Mine Operator EVANS COAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans (cont'd)

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.) tons	33	30	40
Size: Mine Designation	Fines	Fines	Fines
Screen Opening in.	Minus $\frac{1}{4}$ sq	Minus $\frac{1}{4}$ slot	Minus $\frac{1}{4}$ slot
ERL Laboratory No.	2092-76	2905-75	4006-74
Proximate Analysis			
Moisture (Equilibrium)..... %	5.5	5.5	5.5
Ash	13.7	16.9	13.8
Volatile Matter	35.9	35.5	35.4
Fixed Carbon	44.9	42.1	45.3
Sulphur	5.7	6.1	5.7
Calorific Value Btu/lb.	11,080	10,450	11,140
Ash Fusibility			
Initial Temp.°F	2020	2150	1860
Softening Temp:(a) Spherical°F	2150	2260	2030
(b) Hemispherical.°F	2230	2290	2070
Fluid Temp.°F	2270	2360	2110
Grindability Index (Hardgrove)	54	55	-
Free Swelling Index (ASTM)	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$
Classification by Rank (ASTM)	High-Volatile B Bituminous		
Trace Mercuryppm	0.10	0.11	0.10

Mine Operator RIVER HEBERT COAL COMPANY LIMITED
 Mine Location River Hebert, Cumberland County, Nova Scotia
 Name of Mine or Coal River Hebert (See Note)

Date Sampled	17-12-75	17-12-75*
Weight Sampled (approx.) tons	95	70
Size: Mine Designation	Slack	Slack
Screen Opening in.	Minus $1\frac{1}{2}$ sq	Minus $1\frac{1}{2}$ sq
ERL Laboratory No.	2104-76	2101-76
Proximate Analysis		
Moisture %	2.2	2.3
Ash %	17.6	19.6
Volatile Matter %	33.0	33.1
Fixed Carbon %	47.2	45.0
Sulphur %	4.8	5.4
Calorific Value Btu/lb.	11,750	11,290
Ash Fusibility		
Initial Temp.°F	2030	2030
Softening Temp:(a) Spherical°F	2170	2170
(b) Hemispherical.°F	2240	2250
Fluid Temp.°F	2370	2370
Grindability Index (Hardgrove)	58	58
Free Swelling Index (ASTM)	6	4
Classification by Rank (ASTM)	High-Volatile A Bituminous	
Trace Mercuryppm	0.19	0.23

* Sampled from deliveries to the Nova Scotia Power Corporation, Harrison Lake Station (Maccan).

Note: Underground, longwall advance mining. One 36 in. seam; 21° dip. Overburden, 1500 ft. Production in 1975, 32,862 st.

Mine Operator	THORBURN MINING LIMITED (PICORD)
Mine Location	Stellarton, Pictou County, Nova Scotia
Name of Mine or Coal	Coal Reclamation Project - Wash Plant

Date Sampled	18-11-75	18-11-75	18-11-75
Weight Sampled (approx.) tons	650	80	100
Size: Mine Designation	Raw Feed	Screened	Slack
Screen Opening in.	-	Plus $\frac{3}{4}$ sq	Minus $\frac{3}{4}$ sq
FRC Laboratory No.	2085-76	2082-76	2083-76
Proximate Analysis			
Moisture %	5.7	3.3	4.8
Ash %	49.3	35.8	26.9
Volatile Matter %	19.4	23.3	23.5
Fixed Carbon %	25.7	37.6	44.8
Sulphur %	0.6	0.9	0.8
Calorific Value Btu/lb.	5680	8540	9660
Ash Fusibility			
Initial Temp.°F	-	2280	2600
Softening Temp:(a) Spherical°F	-	2620	2700+
(b) Hemispherical.°F	-	2700+	2700+
Fluid Temp.°F	-	2700+	2700+
Grindability Index (Hardgrove)	-	56	54
Free Swelling Index (ASTM)	-	1	1
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.03	0.08	0.07

Note: Coal reclamation from surface waste dumps. Material beneficiated by water Cyclones and jig. Capacity, 100 tph. Production (clean coal) in 1975, 34,371 st.

B. NEW BRUNSWICK

Mine Operator N.B. COAL LIMITED (See Note)
 Mine Location Coal Creek, Minto Coalfield, New Brunswick
 Name of Mine or Coal 9W Dragline

Date Sampled	04-12-75*
Weight Sampled (approx.)tons	515
Size: Mine Designation	Run of Mine
Screen Openingin.	-
ERL Laboratory No.	2074-76
Proximate Analysis	
Moisture%	2.9
Ash%	18.8
Volatile Matter%	31.7
Fixed Carbon%	46.6
Sulphur%	7.5
Calorific ValueBtu/lb.	11,630
Ash Fusibility	
Initial Temp.°F	1980
Softening Temp: (a) Spherical°F	2020
(b) Hemispherical.....°F	2130
Fluid Temp.°F	2160
Grindability Index (Hardgrove)	62
Free Swelling Index (ASTM)	5
Classification by Rank (ASTM)	High-Volatile A Bituminous
Trace Mercuryppm	0.52

* Sampled on delivery to the New Brunswick Electric Power Commission, Grand Lake Station.

Note: All coal mines in New Brunswick are now operated by N.B. Coal Limited. Surface, furrow method mining. One 22 in. seam; horizontal. Overburden 40 to 80 ft. Production in 1975 from all mines, 461,000 st. Some of the coal is beneficiated in a wash plant located at Mills Siding. The plant is equipped with a McNally jig, capacity 150 tph.

Mine Operator	N.B. COAL LIMITED
Mine Location	New Zion, Minto Coalfield, New Brunswick
Name of Mine or Coal	Knox; Link-Belt Dragline

Date Sampled	4-12-75*
Weight Sampled (approx.)tons	45
Size: Mine Designation	Run of Mine
Screen Openingin.	-
FRC Laboratory No.	2076-76
Proximate Analysis	
Moisture%	3.7
Ash%	20.6
Volatile Matter%	30.4
Fixed Carbon%	45.3
Sulphur%	8.2
Calorific ValueBtu/lb.	11,220
Ash Fusibility	
Initial Temp.°F	1990
Softening Temp: (a) Spherical°F	2020
(b) Hemispherical.....°F	2160
Fluid Temp.°F	2180
Grindability Index (Hardgrove)	65
Free Swelling Index (ASTM)	5½
Classification by Rank (ASTM)	High-Volatile A Bituminous
Trace Mercuryppm	0.46

* Sampled on delivery to the New Brunswick Electric Power Commission, Grand Lake Station.

Mine Operator N.B. COAL LIMITED
 Mine Location North Minto, Minto Coalfield, New Brunswick.
 Name of Mine or Coal Knox; 4500 Dragline

Date Sampled	4-12-75*
Weight Sampled (approx.)tons	30
Size: Mine Designation	Run of Mine
Screen Openingin.	-
ERL Laboratory No.	2075-76
Proximate Analysis	
Moisture%	3.2
Ash%	13.2
Volatile Matter%	33.7
Fixed Carbon%	49.9
Sulphur%	3.8
Calorific ValueBtu/lb.	12,670
Ash Fusibility	
Initial Temp.°F	2090
Softening Temp: (a) Spherical°F	2290
(b) Hemispherical.....°F	2390
Fluid Temp.°F	2420
Grindability Index (Hardgrove)	64
Free Swelling Index (ASTM)	5½
Classification by Rank (ASTM)	High-Volatile A Bituminous
Trace Mercuryppm	0.22

* Sampled on delivery to the New Brunswick Electric Power Commission, Grand Lake Station.

Mine Operator N.B. Coal Limited
 Mine Location Mills Siding, Minto Coalfield, New Brunswick
 Name of Mine or Coal Coal Washing Plant* (See Note)

Date Sampled	2-12-75	2-12-75	2-12-75
Weight Sampled (approx.) tons	1010	350	90
Size: Mine Designation	Run of Mine	Screened Lump	Nut
Screen Opening in.	(Raw Feed)	Plus $2\frac{1}{2}$ sq	$2\frac{1}{2}$ to $\frac{3}{4}$ sq
ERL Laboratory No.	2071-76	2064-76	2065-76
Proximate Analysis			
Moisture %	6.0	11.9	3.0
Ash %	19.9	17.7	16.7
Volatile Matter %	28.4	30.9	32.0
Fixed Carbon %	45.7	39.5	48.3
Sulphur %	6.8	7.0	8.0
Calorific Value Btu/lb.	11,150	10,620	12,060
Ash Fusibility			
Initial Temp.°F	1940	1960	1960
Softening Temp: (a) Spherical°F	2020	2000	2020
(b) Hemispherical.°F	2150	2090	2050
Fluid Temp.°F	2310	2350	2150
Grindability Index (Hardgrove)	-	-	60
Free Swelling Index (ASTM)	5	5	5
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercuryppm	0.28	0.77	0.36

Note: Coal originated mainly from 200W, dragline, Coal Creek area. Coal is cleaned in wash plant equipped with a McNally jig; capacity, 150 tph.

Mine Operator N.B. COAL LIMITED
 Mine Location Mills Siding, Minto Coalfield, New Brunswick
 Name of Mine or Coal Coal Washing Plant (cont'd)

Date Sampled	2-12-75	2-12-75	3-12-75*
Weight Sampled (approx.) tons	320	150	80
Size: Mine Designation	Stoker Pea	Fines	Total Cleaned
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ sq	Minus $\frac{1}{4}$ sq	Coal less Stoker Pea
ERL Laboratory No.	2067-76	2069-76	2072-76
Proximate Analysis			
Moisture %	2.8	9.3	4.7
Ash %	14.1	20.7	22.8
Volatile Matter %	33.7	26.8	29.5
Fixed Carbon %	49.4	43.2	43.0
Sulphur %	6.5	6.6	7.8
Calorific Value Btu/lb.	12,600	10,390	10,780
Ash Fusibility			
Initial Temp.°F	1970	1960	2000
Softening Temp:(a) Spherical°F	2030	2060	2080
(b) Hemispherical.°F	2160	2200	2220
Fluid Temp.°F	2220	2270	2290
Grindability Index (Hardgrove)	58	66	65
Free Swelling Index (ASTM)	5½	5	5
Classification by Rank (ASTM)	High-Volatile A Bituminous		
Trace Mercury ppm	0.28	0.38	0.62

* Sampled from deliveries to the New Brunswick Electric Power Commission, Grand Lake Station.

Mine Operator
 Mine Location
 Name of Mine or Coal

N.B. COAL LIMITED
 Coal Creek, Minto Coalfield, New Brunswick
 7200 Dragline

Date Sampled
 Weight Sampled (approx.)tons

3-12-75
 90

Size: Mine Designation
 Screen Openingin.

Run of Mine
 -

ERL Laboratory No.

2073-76

Proximate Analysis

Moisture%
 Ash%
 Volatile Matter%
 Fixed Carbon%
 Sulphur%
 Calorific ValueBtu/lb.
 Ash Fusibility
 Initial Temp.°F
 Softening Temp: (a) Spherical°F
 (b) Hemispherical.....°F
 Fluid Temp.°F
 Grindability Index (Hardgrove)
 Free Swelling Index (ASTM)
 Classification by Rank (ASTM)
 Trace Mercuryppm

3.0
 18.2
 31.5
 47.3
 7.8
 11,820
 1950
 2010
 2080
 2220
 61
 5
 High-Volatile A Bituminous
 0.37

SECTION II - ULTIMATE AND ASH ANALYSES

- A. Nova Scotia
- B. New Brunswick

A. NOVA SCOTIA

Mine Operator CAPE BRETON DEVELOPMENT CORP. (DEVCO)
 Mine Location Lingan, Cape Breton County, Nova Scotia
 Name of Mine or Coal Lingan Mine

Date Sampled 15-04-75
 Weight Sampled (approx) tons. 270

Size: Mine Designation Screened Lump
 Screen Opening in. Plus 2 sq

ERL Laboratory No. 2907-75

Ultimate Analysis

Carbon % 76.2
 Hydrogen % 5.3
 Sulphur % 2.1
 Nitrogen % 1.7
 Ash % 9.1
 Oxygen (by difference) % 5.6

Ash Analysis

SiO₂ % 40.7
 Al₂O₃ % 22.9
 Fe₂O₃ % 26.9
 TiO₂ % 0.9
 P₂O₅ % 0.5
 CaO % 1.1
 MgO % 1.3
 SO₃ % 1.1
 Na₂O % 0.7
 K₂O % 2.3

Mine Operator CAPE BRETON DEVELOPMENT CORP. (DEVCO)
 Mine Location Lingan, Cape Breton County, Nova Scotia
 Name of Mine or Coal Lingan Mine

Date Sampled	15-04-75	08-05-75	18-06-74
Weight Sampled (approx) tons.	1250	550	350

Size: Mine Designation	Slack	Slack	Slack
Screen Opening in.	Minus 2 sq	Minus 2 sq	Minus 2 sq

ERL Laboratory No.	2908-75	2906-75	3995-74
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Ultimate Analysis

Carbon	68.0	77.0	75.5
Hydrogen	4.7	5.1	5.4
Sulphur	2.5	1.5	3.1
Nitrogen	1.5	1.7	1.6
Ash	17.4	8.7	9.9
Oxygen (by difference)	5.9	6.0	4.5

Ash Analysis

SiO ₂	49.5	43.8	36.8
Al ₂ O ₃	23.8	23.8	24.2
Fe ₂ O ₃	16.6	18.0	34.1
TiO ₂	1.0	0.8	0.8
P ₂ O ₅	0.3	0.3	0.4
CaO	1.0	3.9	1.1
MgO	1.4	1.4	0.4
SO ₃	1.4	3.3	1.0
Na ₂ O	0.6	0.7	0.7
K ₂ O	2.7	2.6	2.2

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No. 26 Mine

Date Sampled	09-04-75	22-05-75
Weight Sampled (approx) tons.	700	55

Size: Mine Designation	Screened Lump	Egg
Screen Opening in.	Plus 2 sq	Plus $1\frac{3}{4}$ rd

ERL Laboratory No.	2909-75	2896-75
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Ultimate Analysis

Carbon	77.0	82.7
Hydrogen	5.2	5.4
Sulphur	2.2	0.8
Nitrogen	1.7	1.8
Ash	9.9	3.1
Oxygen (by difference)	4.0	6.2

Ash Analysis

SiO ₂	47.6	34.5
Al ₂ O ₃	21.0	23.4
Fe ₂ O ₃	22.9	35.2
TiO ₂	0.9	1.6
P ₂ O ₅	0.4	0.6
CaO	0.7	1.8
MgO	1.2	1.1
SO ₃	0.9	1.2
Na ₂ O	0.6	0.7
K ₂ O	2.3	0.8

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia.
 Name of Mine or Coal No.26 Mine

Date Sampled	22-05-75	22-05-75	20-06-74
Weight Sampled (approx) tons..	100	750	400
Size: Mine Designation	Nut	Coarse Slack	Slack
Screen Openingin.	1 $\frac{3}{4}$ to $\frac{3}{4}$ rd	Minus 1 $\frac{3}{4}$ rd	Minus $\frac{3}{4}$ rd
ERL Laboratory No.	2897-75	2898-75	3992-74
<u>Ultimate Analysis</u>			
Carbon	79.8	84.0	79.9
Hydrogen	5.5	5.7	5.3
Sulphur	0.9	1.1	0.9
Nitrogen	1.8	1.8	1.7
Ash	3.2	3.4	7.5
Oxygen (by difference)	8.8	4.0	4.7
<u>Ash Analysis</u>			
SiO ₂	33.2	39.0	42.5
Al ₂ O ₃	22.5	22.8	23.5
Fe ₂ O ₃	37.5	31.2	21.0
TiO ₂	1.4	1.3	0.3
P ₂ O ₅	0.4	0.5	0.5
CaO	1.7	1.6	3.2
MgO	1.0	0.9	1.6
SO ₃	1.6	1.4	2.9
Na ₂ O	0.6	0.6	0.1
K ₂ O	0.9	1.2	2.6

Mine Operator	CAPE BRETON DEVELOPMENT CORP (DEVCO)
Mine Location	Glace Bay, Cape Breton County, Nova Scotia
Name of Mine or Coal	No. 26 Mine

Date Sampled	22-05-75	09-04-75	20-06-74
Weight Sampled (approx) tons.	85	75	85

Size: Mine Designation	Pea	Pea	Pea
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ rd	$\frac{3}{4}$ rd to $\frac{1}{4}$ slot	$\frac{3}{4}$ rd to $\frac{1}{4}$ slot

ERL Laboratory No.	2899-75	2910-75	3991-74
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Ultimate Analysis

Carbon	%	83.7	78.5	82.2
Hydrogen	%	5.6	5.2	5.5
Sulphur	%	0.7	1.9	1.0
Nitrogen	%	1.8	1.7	1.7
Ash	%	3.4	8.3	4.8
Oxygen (by difference)	%	4.8	4.3	4.8

Ash Analysis

SiO ₂	%	39.3	46.8	39.5
Al ₂ O ₃	%	25.0	20.9	23.0
Fe ₂ O ₃	%	27.0	24.3	26.3
TiO ₂	%	1.3	1.0	0.4
P ₂ O ₅	%	0.6	0.4	0.7
CaO	%	1.6	1.5	2.6
MgO	%	0.9	1.1	1.5
SO ₃	%	1.6	1.9	2.1
Na ₂ O	%	0.6	0.7	0.1
K ₂ O	%	1.5	2.1	2.1

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Glace Bay, Cape Breton County, Nova Scotia
 Name of Mine or Coal No. 26 Mine

Date Sampled	22-05-75	09-04-75	20-06-75
Weight Sampled (approx) tons.	675	450	265

Size: Mine Designation	Fines	Fines	Fines
Screen Opening in.	Minus $\frac{1}{4}$ rd	Minus $\frac{1}{4}$ slot	Minus $\frac{1}{4}$ slot

ERL Laboratory No.	2900-75	2911-75	3993-74
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Ultimate Analysis

Carbon	77.7	75.5	79.2
Hydrogen	5.0	5.1	5.3
Sulphur	1.3	1.9	1.1
Nitrogen	1.7	1.6	1.6
Ash	8.2	11.2	7.8
Oxygen (by difference)	6.1	4.7	5.0

Ash Analysis

SiO ₂	49.3	43.4	41.1
Al ₂ O ₃	23.1	20.3	27.2
Fe ₂ O ₃	18.5	23.7	21.5
TiO ₂	1.1	0.9	0.8
P ₂ O ₅	0.3	0.4	0.2
CaO	1.7	2.7	2.4
MgO	1.2	1.2	1.5
SO ₃	1.9	3.2	3.0
Na ₂ O	1.2	0.9	1.4
K ₂ O	2.6	2.1	2.7

Mine Operator CAPE BRETON DEVELOPMENT CORP (DEVCO)
 Mine Location Sydney Mines, Cape Breton County, Nova Scotia
 Name of Mine or Coal Princess Mine (Wash Plant)

Date Sampled	13-06-74	13-06-74	13-06-74	13-06-74
Weight Sampled (approx) tons.	105	400	165	275
Size: Mine Designation	Pea	Coarse Slack	Slack	Fines
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ rd	Minus $\frac{3}{4}$ rd	Minus $\frac{3}{4}$ rd	Minus $\frac{1}{4}$ rd
FRC Laboratory No.	3999-74	3998-74	4000-74	4001-74
<u>Ultimate Analysis</u>				
Carbon	80.5	80.0	73.0	67.3
Hydrogen	5.6	5.4	5.2	4.8
Sulphur	3.2	2.7	3.1	2.8
Nitrogen	1.6	1.6	1.4	1.4
Ash	4.9	5.3	13.3	19.6
Oxygen (by difference)	4.2	5.0	4.0	4.1
<u>Ash Analysis</u>				
SiO ₂	13.8	14.6	43.7	50.6
Al ₂ O ₃	18.0	17.3	24.7	28.5
Fe ₂ O ₃	64.9	57.3	24.3	12.9
TiO ₂	0.5	0.7	0.7	0.5
P ₂ O ₅	0.7	0.6	0.4	0.0
CaO	1.2	3.3	1.2	0.6
MgO	0.3	0.3	0.9	1.0
SO ₃	1.1	4.4	1.1	0.4
Na ₂ O	0.4	0.4	0.7	0.7
K ₂ O	0.5	0.8	2.9	3.6

Mine Operator	CAPE BRETON DEVELOPMENT CORP (DEVCO)
Mine Location	Point Aconi, Cape Breton County, Nova Scotia
Name of Mine or Coal	Devco Strip Mine

Date Sampled	19-11-75
Weight Sampled (approx.).....tons	900
Size: Mine Designation	Slack
Screen Opening	Minus 2
FRC Laboratory No.	2099-76

Ultimate Analysis

Carbon	%	61.7
Hydrogen	%	4.3
Sulphur	%	5.0
Nitrogen	%	1.3
Ash	%	21.1
Oxygen (by difference)	%	6.6

Ash Analysis

SiO ₂	%	39.7
Al ₂ O ₃	%	23.5
Fe ₂ O ₃	%	27.0
TiO ₂	%	1.2
P ₂ O ₅	%	0.7
CaO	%	1.0
MgO	%	0.5
SO ₃	%	0.7
Na ₂ O	%	2.7
K ₂ O	%	2.3

Mine Operator	DRUMMOND COAL COMPANY LIMITED
Mine Location	Westville, Pictou County, Nova Scotia
Name of Mine or Coal	Drummond

Date Sampled	20-11-75	20-11-75	20-11-75
Weight Sampled (approx.)..... tons	25	15	20

Size: Mine Designation	Screened Lump	Nut	Slack
Screen Opening	Plus $1\frac{1}{2}$ sq	$1\frac{1}{2}$ to $\frac{3}{4}$ sq	Minus $\frac{3}{4}$ sq

FRC Laboratory No.	2095-76	2096-76	2097-76
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Ultimate Analysis

Carbon	65.3	63.3	61.2
Hydrogen	4.1	4.4	3.9
Sulphur	1.7	2.4	2.6
Nitrogen	1.7	1.8	1.6
Ash	21.2	23.1	24.8
Oxygen (by difference)	6.0	5.1	5.9

Ash Analysis

SiO ₂	54.8	49.7	41.0
Al ₂ O ₃	26.9	24.2	20.7
Fe ₂ O ₃	10.0	13.9	15.2
TiO ₂	1.2	1.1	0.9
P ₂ O ₅	0.5	0.5	0.9
CaO	1.3	2.4	8.0
MgO	1.0	1.4	1.8
SO ₃	0.9	2.1	7.6
Na ₂ O	3.0	3.0	3.1
K ₂ O	1.7	1.7	1.5

Mine OperatorEVANS' GOAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans

Date Sampled	12-11-75	13-05-75
Weight Sampled (approx)tons.	25	40
Size: Mine Designation	Medium Lump	Medium Lump
Screen Openingin.	6 to 3 $\frac{1}{4}$ sq	6 to 3 $\frac{1}{4}$ sq
FRC Laboratory No.	2086-76	2901-75
<u>Ultimate Analysis</u>		
Carbon	70.2	72.0
Hydrogen	4.6	4.9
Sulphur	6.4	6.2
Nitrogen	1.4	1.4
Ash	9.2	7.7
Oxygen (by difference)	8.2	7.8
<u>Ash Analysis</u>		
SiO ₂	26.1	26.8
Al ₂ O ₃	12.9	13.0
Fe ₂ O ₃	37.2	39.3
TiO ₂	0.6	1.0
P ₂ O ₅	1.0	1.6
CaO	5.5	7.3
MgO	1.2	0.3
SO ₃	5.9	8.1
Na ₂ O	3.8	1.3
K ₂ O	1.3	0.6

Mine Operator
 Mine Location
 Name of Mine or Coal

EVANS COAL MINES LIMITED
 St. Rose, Inverness County, Nova Scotia
 St. Rose; Evans

Date Sampled
 Weight Sampled (approx.)..... tons

12-11-75 13-05-75
 30 50

Size: Mine Designation
 Screen Openingin.

Egg Egg
 $3\frac{1}{4}$ to 2 sq $3\frac{1}{4}$ to 2 sq

FRC Laboratory No.

2087-76 2902-75

Ultimate Analysis

Carbon	%	68.7	68.5
Hydrogen	%	4.5	4.5
Sulphur	%	6.5	5.7
Nitrogen	%	1.4	1.3
Ash	%	11.0	10.3
Oxygen (by difference)	%	7.9	9.7

Ash Analysis

SiO ₂	%	29.3	29.9
Al ₂ O ₃	%	13.8	14.6
Fe ₂ O ₃	%	33.9	37.0
TiO ₂	%	0.6	0.9
P ₂ O ₅	%	1.6	1.0
CaO	%	7.2	6.4
MgO	%	0.8	0.4
SO ₃	%	8.0	7.1
Na ₂ O	%	3.8	1.1
K ₂ O	%	1.2	1.1

Mine Operator EVANS COAL MINES LIMITED
 Mine Location St. Rose, Inverness County, Nova Scotia
 Name of Mine or Coal St. Rose; Evans

Date Sampled	12-11-75	13-05-75	05-04-75
Weight Sampled (approx.)..... tons	30	10	35
Size: Mine Designation	Nut	Nut	Nut
Screen Openingin.	2 to $\frac{3}{4}$ sq	2 to $\frac{3}{4}$ sq	2 to $\frac{3}{4}$ sq
FRC Laboratory No.	2088-76	2903-75	4004-74

Ultimate Analysis

Carbon	65.4	67.2	69.4
Hydrogen	4.4	4.6	4.5
Sulphur	6.9	7.0	6.6
Nitrogen	1.3	1.3	1.3
Ash	14.8	12.7	11.1
Oxygen (by difference)	7.2	7.2	7.1

Ash Analysis

SiO ₂	29.6	33.2	32.3
Al ₂ O ₃	14.5	17.3	16.8
Fe ₂ O ₃	30.1	36.0	38.7
TiO ₂	0.5	0.7	0.5
P ₂ O ₅	1.0	0.8	0.7
CaO	6.8	4.1	4.7
MgO	1.1	0.6	0.5
SO ₃	8.9	5.1	4.6
Na ₂ O	3.8	1.0	1.2
K ₂ O	1.8	1.6	1.6

Mine Operator	EVANS COAL MINES LIMITED
Mine Location	St. Rose, Inverness County, Nova Scotia
Name of Mine or Coal	St. Rose; Evans

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.)..... tons	20	10	20

Size: Mine Designation	Stoker Pea	Stoker Pea	Stoker Pea
Screen Opening	$\frac{3}{4}$ to $\frac{1}{4}$ sq	$\frac{3}{4}$ to $\frac{1}{4}$ sq	$\frac{3}{4}$ sq to $\frac{1}{4}$ slot

FRC Laboratory No.	2090-76	2904-75	4005-74
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Ultimate Analysis

Carbon	67.3	66.0	69.4
Hydrogen	4.4	4.5	4.5
Sulphur	6.6	7.7	5.9
Nitrogen	1.4	1.4	1.3
Ash	12.5	13.6	11.5
Oxygen (by difference)	7.8	6.8	7.4

Ash Analysis

SiO ₂	29.1	27.9	30.3
Al ₂ O ₃	14.0	16.6	16.0
Fe ₂ O ₃	33.7	39.5	37.8
TiO ₂	0.6	0.6	0.4
P ₂ O ₅	1.1	0.8	0.7
CaO	6.4	4.8	5.8
MgO	1.0	0.6	0.7
SO ₃	7.8	5.7	6.4
Na ₂ O	3.7	0.9	1.2
K ₂ O	1.6	1.4	1.6

Mine Operator	EVANS COAL MINES LIMITED
Mine Location	St. Rose, Inverness County, Nova Scotia
Name of Mine or Coal	St. Rose; Evans

Date Sampled	12-11-75	13-05-75	05-04-74
Weight Sampled (approx.).....tons	33	30	40
Size: Mine Designation	Fines	Fines	Fines
Screen Opening	Minus $\frac{1}{4}$ sq	Minus $\frac{1}{4}$ slot	Minus $\frac{1}{4}$ slot
FRC Laboratory No.	2092-76	2905-75	4006-74

Ultimate Analysis

Carbon	66.0	62.2	66.7
Hydrogen	4.3	4.1	4.2
Sulphur	6.1	6.4	6.0
Nitrogen	1.3	1.2	1.3
Ash	14.5	17.8	14.6
Oxygen (by difference)	7.8	8.3	7.2

Ash Analysis

SiO ₂	26.7	23.3	23.5
Al ₂ O ₃	14.9	14.3	12.3
Fe ₂ O ₃	23.1	17.7	28.1
TiO ₂	0.4	0.4	0.4
P ₂ O ₅	1.4	0.4	0.4
CaO	13.5	16.8	15.6
MgO	1.6	0.8	1.4
SO ₃	16.0	23.4	18.3
Na ₂ O	3.7	0.7	0.9
K ₂ O	1.6	1.6	1.3

Mine Operator	RIVER HEBERT COAL COMPANY LIMITED
Mine Location	River Hebert, Cumberland County, Nova Scotia
Name of Mine or Coal	River Hebert

Date Sampled	17-12-75	17-12-75
Weight Sampled (approx.).....tons	95	70
Size: Mine Designation	Slack	Slack
Screen Opening	Minus $1\frac{1}{2}$ sq	Minus $1\frac{1}{2}$ sq
FRC Laboratory No.	2104-76	2101-76

Ultimate Analysis

Carbon	66.5	64.2
Hydrogen	4.5	4.3
Sulphur	4.9	5.5
Nitrogen	1.4	1.5
Ash	18.0	20.1
Oxygen (by difference)	4.7	4.4

Ash Analysis

SiO ₂	35.7	33.9
Al ₂ O ₃	18.0	17.3
Fe ₂ O ₃	23.0	24.4
TiO ₂	0.9	0.9
P ₂ O ₅	1.8	1.5
CaO	6.7	6.6
MgO	1.2	1.7
SO ₃	6.8	7.0
Na ₂ O	0.5	0.5
K ₂ O	2.7	2.6

Mine Operator
 Mine Location
 Name of Mine or Coal

THORBURN MINING LIMITED (PICORD)
 Stellarton, Pictou County, Nova Scotia
 Coal Reclamation Project - Wash Plant

Date Sampled
 Weight Sampled (approx)tons.

18-11-75 18-11-75
 80 100

Size; Mine Designation
 Screen Openingin.

Screened Slack
 Plus $\frac{3}{4}$ sq Minus $\frac{3}{4}$ sq

FRC Laboratory No.

2082-76 2083-76

Ultimate Analysis

Carbon%
 Hydrogen %
 Sulphur %
 Nitrogen %
 Ash %
 Oxygen (by difference) %

51.0 59.0
 3.4 3.8
 1.0 0.8
 1.6 1.4
 37.0 28.3
 6.0 6.7

Ash Analysis

SiO₂ %
 Al₂O₃ %
 Fe₂O₃ %
 TiO₂ %
 P₂O₅ %
 CaO %
 MgO %
 SO₃ %
 Na₂O %
 K₂O %

47.7 50.8
 30.0 28.9
 9.2 8.2
 1.0 1.1
 0.2 0.3
 3.0 1.2
 1.7 0.7
 3.2 0.8
 2.8 2.8
 2.7 2.6

B. NEW BRUNSWICK

Mine Operator N.B. COAL LIMITED
 Mine Location Coal Creek, Minto Coalfield, New Brunswick
 Name of Mine or Coal 9W Dragline

Date Sampled 4-12-75
 Weight Sampled (approx) tons. 515

Size: Mine Designation Run of Mine
 Screen Opening in. -

FRC Laboratory No. 2074-76

Ultimate Analysis

Carbon % 65.0
 Hydrogen % 4.4
 Sulphur % 7.7
 Nitrogen % 0.9
 Ash % 19.4
 Oxygen (by difference) % 2.6

Ash Analysis

SiO₂ % 29.9
 Al₂O₃ % 12.4
 Fe₂O₃ % 39.9
 TiO₂ % 0.7
 P₂O₅ % 2.1
 CaO % 4.2
 MgO % 0.7
 SO₃ % 3.7
 Na₂O % 0.1
 K₂O % 1.2
 MN₃O₄ % 0.3

Mine Operator

Mine Location

Name of Mine or Coal

N.B. COAL LIMITED

New Zion, Minto Coalfield, New Brunswick

Knox; Link-Belt Dragline

Date Sampled

Weight Sampled (approx)tons.

4-12-75

45

Size: Mine Designation

Screen Openingin.

Run of Mine

ERL Laboratory No.

2076-76

Ultimate Analysis

Carbon%

Hydrogen%

Sulphur%

Nitrogen%

Ash%

Oxygen (by difference)%

63.2

4.3

8.5

0.9

21.4

1.7

Ash Analysis

SiO₂%

Al₂O₃%

Fe₂O₃%

TiO₂%

P₂O₅%

CaO%

MgO%

SO₃%

Na₂O%

K₂O%

MN₃O₄%

30.5

12.7

40.6

0.7

2.3

3.8

0.6

3.0

0.1

2.8

0.2

Mine Operator N.B. COAL LIMITED
 Mine Location Minto, Minto Coalfield, New Brunswick
 Name of Mine or Coal Knox; 4500 Dragline

Date Sampled 4-12-75
 Weight Sampled (approx) tons. 30

Size: Mine Designation Run, of Mine
 Screen Opening in. -

ERL Laboratory No. 2075-76

Ultimate Analysis

Carbon% 72.5
 Hydrogen % 4.8
 Sulphur % 3.9
 Nitrogen % 0.9
 Ash % 13.6
 Oxygen (by difference) % 4.3

Ash Analysis

SiO₂ % 42.5
 Al₂O₃ % 20.1
 Fe₂O₃ % 25.0
 TiO₂ % 1.0
 P₂O₅ % 0.7
 CaO % 1.6
 MgO % 1.1
 SO₃ % 1.6
 Na₂O % 0.1
 K₂O % 2.8
 MN₃O₄ % 0.1

Mine Operator N.B. COAL LIMITED
 Mine Location Mills Siding, Minto Coalfield New Brunswick
 Name of Mine or Coal Coal Washing Plant

Date Sampled	2-12-75	2-12-75	2-12-75
Weight Sampled (approx)tons.	1010	350	90

Size: Mine Designation	Run of Mine	Screened Lump	Nut
Screen Openingin.	-	Plus $2\frac{1}{2}$ sq	$2\frac{1}{2}$ to $\frac{3}{4}$ sq

ERL Laboratory No.	2071-76	2064-76	2065-76
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Ultimate Analysis

Carbon	64.0	65.2	67.5
Hydrogen	4.3	4.4	4.6
Sulphur	7.3	8.0	8.3
Nitrogen	0.9	0.9	1.0
Ash	21.2	20.1	17.2
Oxygen (by difference)	2.3	1.4	1.4

Ash Analysis

SiO ₂	36.9	33.0	27.3
Al ₂ O ₃	13.0	11.5	10.5
Fe ₂ O ₃	37.3	41.6	48.6
TiO ₂	1.0	0.8	0.8
P ₂ O ₅	2.3	0.1	2.9
CaO	2.9	4.9	3.0
MgO	0.8	0.3	0.5
SO ₃	1.8	2.7	3.1
Na ₂ O	2.9	2.8	2.9
K ₂ O	1.1	0.6	0.7

Mine Operator	N.B. COAL LIMITED
Mine Location	Mills Siding, Minto Coalfield, New Brunswick
Name of Mine or Coal	Coal Washing Plant

Date Sampled	2-12-75	2-12-75	3-12-75
Weight Sampled (approx) tons.	320	150	80

Size: Mine Designation	Stoker Pea	Fines	Total Cleaned Coal less Stoker Pea
Screen Opening in.	$\frac{3}{4}$ to $\frac{1}{4}$ sq	Minus $\frac{1}{4}$ sq	

ERL Laboratory No.	2067-76	2069-76	2072-76
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Ultimate Analysis

Carbon	%	70.2	62.3	61.1
Hydrogen	%	4.8	4.2	4.1
Sulphur	%	6.7	7.3	8.2
Nitrogen	%	1.0	0.8	0.9
Ash	%	14.5	22.8	23.9
Oxygen (by difference)	%	2.8	2.6	1.8

Ash Analysis

SiO ₂	%	28.6	32.9	36.3
Al ₂ O ₃	%	12.1	13.8	15.4
Fe ₂ O ₃	%	45.1	33.7	37.0
TiO ₂	%	0.8	0.8	0.8
P ₂ O ₅	%	2.4	4.1	1.7
CaO	%	3.3	3.4	2.9
MgO	%	0.6	0.7	0.9
SO ₃	%	2.7	2.2	2.5
Na ₂ O	%	2.9	2.9	3.0
K ₂ O	%	1.1	1.9	1.7

Mine Operator
 Mine Location
 Name of Mine or Coal

N.B. COAL LIMITED
 Minto Coalfield, New Brunswick
 7200 Dragline

Date Sampled

3-12-75

Weight Sampled (approx)tons.

90

Size: Mine Designation

Run of Mine

Screen Openingin.

-

ERL Laboratory No.

2073-76

Ultimate Analysis

Carbon%

66.3

Hydrogen%

4.3

Sulphur%

8.0

Nitrogen%

0.9

Ash%

18.7

Oxygen (by difference)%

1.8

Ash Analysis

SiO₂%

28.3

Al₂O₃%

11.1

Fe₂O₃%

43.2

TiO₂%

0.7

P₂O₅%

2.3

CaO%

3.8

MgO%

0.8

SO₃%

3.5

Na₂O%

2.8

K₂O%

0.9